tib 0905-002

Technical Bulletin

Paper Cockling on the GO RIO / Mutoh RJ-900 Printer

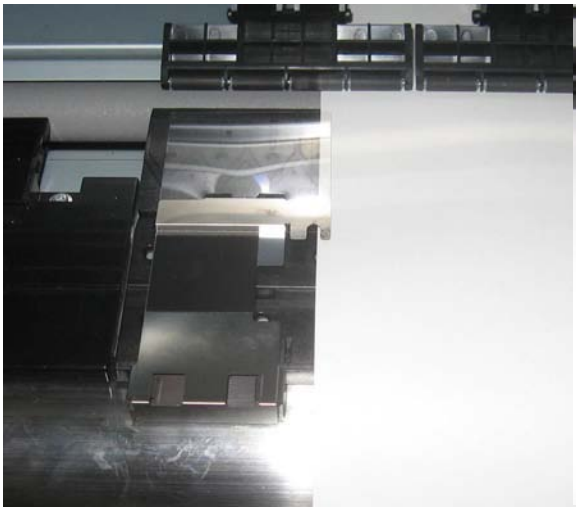
The GO RIO (aka Mutoh RJ-900) printer, when used with sublimation inks and paper, is prone to three types of cockling. In no particular order, these are: edge curl; paper creases between the pinch rollers; and waves (cockling) in the paper across its width.

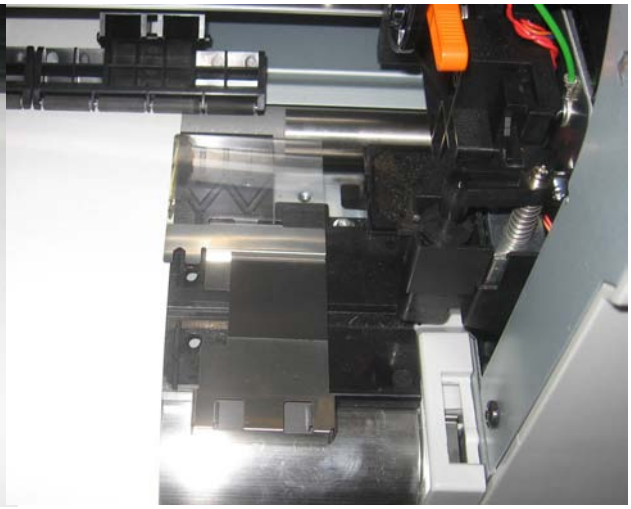
Causes of edge curl

Edge curling is caused by heavy ink saturation near the edges of the paper. This is a common problem on any dye sublimation printer, and can cause severe headaches when the paper curls enough to catch on the head carriage. This can result in overcurrent errors and even damage to the printhead.

Fortunately, there are now edge guards available for the GO RIO printers. These are magnetic pieces that attach to the steel front of the machine and keep the edges down so they don't strike the printhead. If your RIO did not come with a set of these guards, call your dealer to order them.

As shown in the images below, these clips should be placed only about 1/8" (3mm) into the paper. If they are placed any further in, the print head will actually print on the clips, causing ink buildup on the plastic and potentially smearing on the print head.





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Causes of paper creasing

Another common annoyance is when the paper creases up in between the pinch rollers. While this typically does not cause issues with the printhead, it does ruin the transfers. This occurs most frequently on paper with a weight less than 100 grams.

This creasing is caused by insufficient tension on the feed roll. If you see a crease forming as the machine is printing, simply placing your hand on the media bar and grabbing slightly to produce friction will eliminate the crease. A simple, unattended solution is to tie a bungee cord, ratchet strap, or piece of fabric around the feed roller and the center bar of the printer's stand to produce friction and increase the tension of the roll.

The image below shows how to install one of these. However, keep in mind that especially with ratcheting straps, you do not want to put too much tension on the roll. Too much tension can bend the steel bar and damage the plastic holders (shown at right). Additionally, overtension of the roll will strain the printer's paper feed motor and can cause banding issues. In other words, after the tension device is installed, you should be able to turn the roller easily, but the friction from the tension device will prevent it from spinning on its own.

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Causes of wavy cockling

The last type of cockling, again, occurs most frequently on paper below 100 grams. The symptom of this cockling is paper that goes up and down along the length of the platen, sometimes often going high enough to come into contact with the printhead. While cockling such as this is almost nonexistent on 24" or smaller rolls, 36" rolls and above are also more susceptible to it. Switching to a heavier paper or reducing your total ink percentage in the RIP are both possible ways to reduce this.

Most of this cockling is due to the fact that the printer, as originally designed, has the paper come off the platen and go straight down at a 90 degree angle. When the paper becomes wet, it wrinkles (cockles) slightly, and the addition of a 90 degree bend causes the paper to completely buckle, causing head strikes and other problems.

There are two guaranteed methods to eliminate this cockling. The first one does not require modification of your printer, but an operator must be present for the first 5 minutes of printing to move the paper over the bar. The second method, described on the next page, involves slight modification of the printer's front plate, but does not require operator supervision afterward.

The Basket Method

All RIO printers come with catch baskets, originally intended to catch CAD diagrams as they were cut off. However, high release sublimation paper dries very slowly and allowing the cut pieces to drop into a basket will scratch the ink off the surface of the paper, ruining your transfers. Instead, the basket parts can be re-used to prevent cockling. Install the plastic clips upside-down on the printer stand and place the arms into the clips as shown in the image at left.

Once these have been installed on both sides, take the blue fabric basket and remove one of the metal rods from the basket. Place this rod in the two hooks of the basket arms, and let the paper come down off the platen as shown in the picture at right.

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The Front Paper Guide Modification

Angling the front guide forward so the paper comes off the platen at 60 degrees instead of 90 also virtually eliminates the cockling. The front paper guide is held in with screws at the top and bottom. The bottom screws can be removed, allowing you to pull it up to the desired angle. However, be careful as the sheet metal of the guide has sharp edges. You may want to put vinyl tape over the exposed edges of the guide afterward to prevent people from cutting themselves on it.

Start by removing the five screws that hold the front plate in. Three of these screws are circled in red on the above image.

Once these screws have been removed, you can start bending the cover up (gently!) until it is at a 30 degree angle as shown in the image at right.

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